

MARKED-UP COPY OF AMENDED CLAIMS:

34. (Amended) A semiconductor chip assembly comprising:

(a) a first semiconductor chip having a front surface, a rear surface and contacts on said front surface;

(b) a substrate having contact pads thereon, said substrate extending beneath the rear surface of the first semiconductor chip so that said front surface of said first semiconductor chip faces upwardly away from said substrate, at least some of said contacts on said first semiconductor chip being electrically connected to said contact pads of said substrate, said substrate being adapted to connect the first semiconductor chip with other elements of a circuit; and

(c) a second semiconductor chip having front and rear surfaces and having contacts on said front surface, said second semiconductor chip overlying said front surface of said first semiconductor chip, at least some of said contacts on said second semiconductor chip being connected to at least some of said contacts on said first semiconductor chip, said second semiconductor chip being movable with respect to said first semiconductor chip,

~~An assembly as claimed in claim 33~~ further comprising terminals connected to said contacts of said second semiconductor chip, at least some of said terminals overlying a surface of said second semiconductor chip, said terminals overlying said surface of said second semiconductor chip being movable with respect to said second semiconductor chip, said contacts of said second semiconductor chip being connected to said contacts of said first semiconductor chip through said terminals.

35. (Amended) An assembly as claimed in claim 34 further comprising a dielectric element ~~having said terminals thereon, said dielectric element having a central region~~

disposed between said first and second semiconductor chips, ~~at least some of said terminals being disposed in said central region.~~

37. (Amended) An assembly as claimed in claim 35 wherein said front surface of said second semiconductor chip faces downwardly toward said front surface of said first semiconductor chip, and wherein central region of said dielectric element overlies said front surface of said second semiconductor chip.

41. (Amended) A semiconductor chip assembly comprising:

(a) a first semiconductor chip having a front surface, a rear surface and contacts on said front surface;

(b) a substrate having contact pads thereon, said substrate extending beneath the rear surface of the first semiconductor chip so that said front surface of said first semiconductor chip faces upwardly away from said substrate, at least some of said contacts on said first semiconductor chip being electrically connected to said contact pads of said substrate, said substrate being adapted to connect the first semiconductor chip with other elements of a circuit; and

(c) a second semiconductor chip having front and rear surfaces and having contacts on said front surface, said second semiconductor chip overlying said front surface of said first semiconductor chip, at least some of said contacts on said second semiconductor chip being connected to at least some of said contacts on said first semiconductor chip, said second semiconductor chip being movable with respect to said first semiconductor chip,

~~An assembly as claimed in claim 33 further comprising terminals overlying said front surface of said first semiconductor chip, said terminals being movable with respect to said first semiconductor chip, said terminals being movable with~~

respect to said first semiconductor chip, at least some of said contacts of said second semiconductor chip being connected to at least some of said contacts on said first semiconductor chip through said terminals.

46. (Amended) A semiconductor chip assembly comprising:

(a) a first semiconductor chip having a front surface, a rear surface and contacts on said front surface;

(b) a substrate having contact pads thereon, said substrate extending beneath the rear surface of the first semiconductor chip so that said front surface of said first semiconductor chip faces upwardly away from said substrate, at least some of said contacts on said first semiconductor chip being electrically connected to said contact pads of said substrate, said substrate being adapted to connect the first semiconductor chip with other elements of a circuit; and

(c) a second semiconductor chip having front and rear surfaces and having contacts on said front surface, said second semiconductor chip overlying said front surface of said first semiconductor chip, at least some of said contacts on said second semiconductor chip being connected to at least some of said contacts on said first semiconductor chip, said second semiconductor chip being movable with respect to said first semiconductor chip,

~~An assembly as claimed in claim 33~~ further comprising a compliant layer disposed between said semiconductor chips.

47. (Amended) A semiconductor chip assembly comprising:

(a) a first semiconductor chip having a front surface, a rear surface and contacts on said front surface;

(b) a substrate having contact pads thereon, said substrate extending beneath the rear surface of the first semiconductor chip so that said front surface of said first

semiconductor chip faces upwardly away from said substrate, at least some of said contacts on said first semiconductor chip being electrically connected to said contact pads of said substrate, said substrate being adapted to connect the first semiconductor chip with other elements of a circuit; and

(c) a second semiconductor chip having front and rear surfaces and having contacts on said front surface, said second semiconductor chip overlying said front surface of said first semiconductor chip, at least some of said contacts on said second semiconductor chip being connected to at least some of said contacts on said first semiconductor chip, said second semiconductor chip being movable with respect to said first semiconductor chip,

~~An assembly as claimed in claim 33~~ further comprising bonding wires, at least some of said contacts on said first semiconductor chip being electrically connected to contact pads on said substrate by said bonding wires.

48. (Amended) A semiconductor chip assembly comprising:

(a) a first semiconductor chip having a front surface, a rear surface and contacts on said front surface;

(b) a substrate having contact pads thereon, said substrate extending beneath the rear surface of the first semiconductor chip so that said front surface of said first semiconductor chip faces upwardly away from said substrate, at least some of said contacts on said first semiconductor chip being electrically connected to said contact pads of said substrate, said substrate being adapted to connect the first semiconductor chip with other elements of a circuit; and

(c) a second semiconductor chip having front and rear surfaces and having contacts on said front surface, said second semiconductor chip overlying said front surface of said first semiconductor chip, at least some of said contacts on said

second semiconductor chip being connected to at least some of said contacts on said first semiconductor chip, said second semiconductor chip being movable with respect to said first semiconductor chip,

~~An assembly as claimed in claim 33 wherein said substrate is a circuit panel.~~

52. (Amended) A semiconductor chip assembly, comprising:

a) a first semiconductor chip having a front surface, a rear surface and contacts on said front surface;

b) a second semiconductor chip having a front surface, a rear surface and contacts on said front surface, said rear surface of said second semiconductor chip being juxtaposed with said front surface of said first semiconductor chip;

c) a third semiconductor chip having a front surface, ~~a rear surface~~ and a rear surface, said rear surface of said ~~second~~ third semiconductor chip being juxtaposed with said front surface of said second semiconductor chip;

d) a first backing element having electrically conductive first terminals, said first backing element being juxtaposed with said rear surface of said first semiconductor chip so that at least some of said terminals overlie said rear surface of said first semiconductor chip, at least some of said contacts on said first and said second semiconductor chips being electrically connected to at least some of said terminals; and

e) a substrate having contact pads thereon, said first terminals being connected to said contact pads of said substrate, said substrate being adapted to connect the assembly with other elements of a circuit, said terminals of said backing element overlying said rear surface of said first semiconductor chip.

REMARKS

This is in response to the Official Action mailed December 19, 2001, in which Claims 2-32 and 52-62 were allowed, Claim 33 was rejected, and Claims 34-51 were objected to. Claims 34-51 were objected to as being dependent upon a rejected base claim, but were indicated to be allowable if rewritten in independent form. This indication of allowable subject matter is greatly appreciated by Applicants. Although Applicants were unable to contact the Examiner to discuss claim language, Applicants appreciate the opportunity to do so.

Claim 33 has been cancelled. Claims 34, 41, 46, 47 and 48 have been rewritten to be presented in independent form.

Claim 33 was rejected as being obvious under 35 U.S.C. § 103(a) as being unpatentable over *Honn, et al.*, U.S. Patent No. 4,074,342 ("*Honn*"). Claims 34-51 include the limitations of Claim 33, which is directed to a semiconductor chip assembly. These claims require a substrate underlying a first semiconductor chip that has a front surface with contacts that face away from the substrate. The contacts are connected to contact pads on the substrate. The assembly further includes a second chip overlying the first chip and having contacts connected to at least some of the contacts on the first chip. Claims 34-51 require that the second chip is movable with respect to the first chip.

*Honn* discloses a carrier 29 having pin-terminals 24. A transposer 30 is mounted over the carrier 29 and conductive vias 38 extend through the transposer 30. The conductive vias are connected to ends of the terminals 24 utilizing solder 32. A stack of chips (36, 36', and 36'') are mounted over the transposer 30. Conductive vias of each chip are connected to the conductive vias of adjacent chips as shown in Fig. 2A. The conductive vias of the first chip 36 are connected to topside metallurgy 58 on the transposer 30.

In the Official Action, it is admitted that *Honn* does not teach that features of the second chip are movable with respect to features of the first chip. The Official Action asserts that it is well known to move or displace chips in interconnecting assemblies, such as where the second chip is moved with respect to the first chip during assembly, or where a chip is moved due to corrosion of the interconnections. Applicants believe that it is clear from the present application that "movable" could not be interpreted to include such movement, even under M.P.E.P. 2111. Applicants' disclosure should be considered in determining the broadest reasonable interpretation of the claims. See *in re Cortright*, 165 F.3d 1353, 1359 (Fed. Cir. 1999).

Respectfully, such interpretation is also not reasonable because it is inconsistent with the interpretation that those skilled in the art would reach. Applicants respectfully refer to the mandate of the Federal Circuit that "claim construction is not philosophy" but instead must be "firmly anchored in reality by the understanding of those of ordinary skill in the art." *K-2 v. Salomon S.A.*, 52 U.S.P.Q.2d 1001-1006 (Fed. Cir. 1999). In *Salomon*, it was held that the phrase "permanently affixed" did not require a "infinitely permanent" connection which could not be broken under any circumstances, but merely required a connection which in its normal, intended use would not be broken. The term "movable" as used in the context of Claim 33 requires the movability that those of ordinary skill in the art would appreciate from the present application. No such movability is seen in *Honn*. M.P.E.P. 2111.

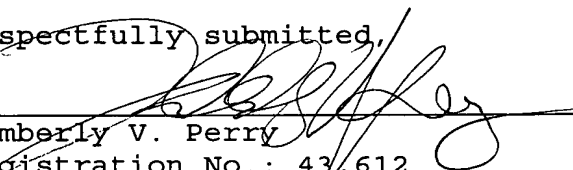
Accordingly, Claims 34-51 are patentable over *Honn* for the reasons discussed above and are otherwise allowable.

Reconsideration of the pending claims, and the issuance of a notice of allowance of the pending claims, is hereby respectfully solicited.

If this response raises any issues, the Examiner is encouraged to contact Applicants' attorney at the telephone number below. If any fee is due in connection with this response, the Examiner is authorized to charge our Deposit Account No. 12-1095 therefor.

Dated: March 19, 2002

Respectfully submitted,

By   
Kimberly V. Perry  
Registration No.: 43,612  
LERNER, DAVID, LITTENBERG,  
KRUMHOLZ & MENTLIK, LLP  
600 South Avenue West  
Westfield, New Jersey 07090  
(908) 654-5000  
Attorneys for Applicant

358556\_1.DOC